

WHAT IS CLAIMED IS:

1. A protection circuit, to be provided for a circuit arrangement having an inductive load and an FET as an N-channel MOS transistor provided upstream of the load with respect to a flow of power current, the FET controlling an energization state of the load, the protection circuit comprising:
 - a first connection changer interposed on a connection line between a gate of the FET and a gate drive voltage supply source, the first connection changer changing a connection state between a first connection state in which the gate is connected to the gate drive voltage supply and a second connection state in which the gate is connected to a ground.
2. The protection circuit according to claim 1, further comprising:
 - a first resistor interposed between the gate and a source of the FET; and
 - a second resistor interposed between the gate and the first connection changer or between the first connection changer and the ground.
3. The protection circuit according to claim 2, further comprising:
 - a second connection changer interposed on a connection line between the gate and the source of the FET, the second

connection changer for connecting and disconnecting the connection line;

wherein the first resistor is interposed on the connection line.

5

4. A protection circuit, to be provided for a circuit arrangement having an inductive load and an FET as an N-channel MOS transistor provided upstream of the load with respect to a flow of power current, the FET controlling an energization state of the load,

10 the protection circuit comprising:

a first connection changer interposed between a portion on a first connection line and a ground, the first connection changer connecting and disconnecting between the portion and the ground;

15

wherein the first connection line connects a gate of the FET and a gate drive voltage supply source.

5. The protection circuit according to claim 4, further comprising:

20

a first resistor interposed on a second connection line between the gate and a source of the FET; and

a second resistor interposed on a route from the gate to the ground through the first connection line and the connection changer.

25

6. The protection circuit according to claim 5, further comprising:

a second connection changer interposed on the second connection line between the gate and the source of the FET,

5 the second connection changer connecting and disconnecting the second connection line;

wherein the first resistor is interposed in the second connection line.

10 7. A protection circuit, to be provided for a circuit arrangement having an inductive load and an FET as a P-channel MOS transistor, the FET for controlling an energization state of the load, the protection circuit comprising:

a connection changer interposed on a connection line
15 between a gate of the FET and a ground, the connection changer changing a connection state between a first connection state in which the gate is connected to the ground and a second connection state in which the gate is connected to a source of the FET;

20 a first resistor interposed between the gate of the FET and the connection changer or between the connection changer and the source of the FET; and

a second resistor interposed between the gate and the drain of the FET.

8. A protection circuit, to be provided for a circuit arrangement having an inductive load and an FET as a P-channel MOS transistor, the FET controlling an energization state of the load, the protection circuit comprising:

5 a connection changer interposed between a portion, on a connection line between a gate and a source of the FET, and a ground, the connection changer connecting and disconnecting between the portion and the ground;

10 a first resistor interposed on a route of from the gate of the FET to the source thereof through the connection line; and

15 a second resistor interposed between the gate and a drain of the FET.

15 9. A protection circuit, to be provided for a circuit arrangement having an inductive load and an IGBT provided upstream of the load with respect to a flow of power current, the IGBT controlling an energization state of the load, the protection circuit comprising:

20 a connection changer interposed on a connection line between a gate of the IGBT and a gate drive voltage supply source, the connection changer changing a connection state between a first connection state in which the gate is connected to the gate drive voltage supply and a second connection state in which
25 the gate is connected to a ground.

10. The protection circuit according to claim 9, further comprising:

5 a first resistor interposed between the gate and an emitter of the IGBT; and

 a second resistor interposed between the gate of the IGBT and the connection changer or between the connection changer and the ground.

10 11. A protection circuit, to be provided for a circuit arrangement having an inductive load and an IGBT provided upstream of the load with respect to a flow of power current, the IGBT controlling an energization state of the load, the protection circuit comprising:

15 a connection changer interposed between a portion on a connection line and a ground, the connection changer connecting and disconnecting between the portion and the ground;

 wherein the connection line connects a gate of the IGBT and a gate drive voltage supply source.

20 12. The protection circuit according to claim 11, further comprising:

 a first resistor interposed between the gate and an emitter of the IGBT; and

25 a second resistor interposed on a route from the gate

of the IGBT to the ground through the connection line and the connection changer.